

Date: Wednesday, 9/20/2006 3:22:16 PM  
User: Kim Johnston

## Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services	Drawing Name	: 0H-58 SKIDTUBE ASSEMBLY
Job Number	: 28659A		
Estimate Number	: 10475		
P.O. Number	: N/A	Part Number	: D058672041
This Issue	: 9/20/2006 S.O. No. : N/A	Drawing Number	: D2922 REV A1
Prsht Rev.	: NC	Project Number	: N/A
First Issue	: N/A Type : LANDING GEAR	Drawing Revision	: A1
Previous Run	: 28658A	Material	: N/A
Written By	: <i>[Signature]</i>	Due Date	: 10/5/2006 Qty: 1 Um: Each
Checked & Approved By	: <i>[Signature]</i> 06 09 20		
Comment	: Est Rev:C 02.06.28 Re-format; ECN 258 KJ Est Rev:D 06.02.06 Added Dt8025 EC		

## Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
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1.0	DC	DOCUMENT CONTROL
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Comment: DOCUMENT CONTROL

Photocopy bluefile &amp; type labels per PPP D058-672-041 CHG 001 N/A

2.0	D2620	Bent 206 Skidtube
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Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

Pick:

Qty	Part Number	Description	Batch
1	D2620	Bent Tube 3" OD	<i>B 28932 BE 06-11-03</i>

3.0	LANDING GEAR 1	LANDING GEAR RESOURCE 1
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Comment: LANDING GEAR RESOURCE 1

1-Deburr Fwd edge of tube

2-Weld D2794 cap as per QSI 004 and Dwg D2922. Use aluminum rod.

A/R Aluminum Rod

*B 28932 m101655/m101010 BE 06-11-03*

3-Cut aft end of D2620 bent tube as per dwg D2922

*JP 6-10-6*4-Drill pilot holes using drill jig DT8480 and DT8025 open to 0.312" dia. *m. 06/11/07 ①*5-Drill holes for wearplates using DT 8487 Open to 0.297" dia. *m. 06/11/07 ①*6-Drill holes for aft cap as per Dwg D2922 using drill jig DT 8025. Open using #6 Drill Bit *m. 06/11/07 ①*8-Remove inner indexing ridge on aft end of skidtube as per Dwg D2922 *Pm 06-11-07 ①*

**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

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Drawing Name: 0H-58 SKIDTUBE ASSEMBLY

Job Number: 28659A

Part Number: D058672041

Job Number:



Seq. #:

Machine Or Operation:

Description :

9-Deburr and Blow out all chips form inside the tube

*Ph 06-11-7 (1)*

4.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

*M-2 06/11/07 (1)*

5.0

D2923

Web



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Pick:

Qty Part Number

Description

Batch

1 D2923

Web

*B29229*

*M-2 06/11/08 (1)*

6.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Open holes to finished size as per Dwg D2922(without cutting fluid)

*M-2 06/11/08 (1)*

2-Countersink crossbolt spacer holes as per Dwg D2922(without cutting fluid)

*M-2 06/11/08 (1)*

3-Deburr and Blow out all chips from inside the tube

*M-2 06/11/08 (1)*

4-Bond D2923 web in place as per QSI 015. Ensure holes lineup

A/R

Sikaflex-291

*M102107*

Sikaflex expire date: *07-02-01*

*M-2 06/11/08 (1)*

7.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

*JD*

*06-11-16*

8.0

D2794

Cap



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Qty

Part Number

Description

Batch

1 D2794

Fwd Cap

*M14400*

*BE 06-11-03*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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Job Number: 28659A

Part Number: D058672041

Job Number:



Seq. #:

Machine Or Operation:

Description:

9.0

D2649

Crossbolt Spacer



Comment: Qty.: 22.0000 Each(s)/Unit Total: 22.0000 Each(s)

Pick:

Qty Part Number Description Batch

22 D2649 Crossbolt spacer

*B28648*

*BE 06-11-21*

10.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Weld D2649 cross bolt spacers as per QSI 004 and Dwg D2922.(Remember to back drill each hole to 0.250" before welding the other side)

A/R Aluminum Rod

*M101010*

*BE 06-11-21*

3-Grind welds flush as per Dwg D2922

*BE 06-12-14*

4-Counterbore 5/16" x 0.750" deep as per Dwg D2922

*BE 6-12-14*

11.0

QC5/9

WELD INSPECTION



Comment: WELD INSPECTION

*M06/12/19*

12.0

POWDER COATING

POWDER COATING



Comment: POWDER COATING

Powder Coat White Gloss (Ref: 4.3.5.1) as per QSI 005 4.3

*M-R/am*

*07/01/14*

13.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

*FC 07 01 22*

14.0

D26483

Wearpad



Comment: Qty.: 5.0000 Each(s)/Unit Total: 5.0000 Each(s)

Pick:

Qty Part Number Description Batch

5 D2648-3 Wearpad

*B28249*

*M-R/m*

*07/01/22*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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Job Number: 28659A

Part Number: D058672041

Job Number:



Seq. #:

Machine Or Operation:

Description :

15.0

D265615

Wearplate



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

Pick:

Qty Part Number Description

Batch

1 D2656-15 Wearshoe

B28694

16.0

D265621

Wearplate



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

Pick:

Qty Part Number Description

Batch

1 D2656-21 Wearshoe

B27075

17.0

D2924

Wearshoe



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

Pick:

Qty Part Number Description

Batch

1 D2924 Wearshoe

B27927

18.0

MS27039108

Screw



Comment: Qty.: 50.0000 Each(s)/Unit Total: 50.0000 Each(s)

Pick:

Qty Part Number Description

Batch

50 MS27039-1-08 Screw

B102404

19.0

AN960JD10L

Washer



①

Comment: Qty.: 50.0000 Each(s)/Unit Total: 50.0000 Each(s)

Pick:

Qty Part Number Description

Batch

50 AN960JD10L Washer

m102217

*m-A/m 07/01/22*

**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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Job Number: 28659A

Part Number: D058672041

Job Number:



Seq. #:

Machine Or Operation:

Description :

20.0

ALS41032130

Insert



Comment: Qty.: 50.0000 Each(s)/Unit Total : 50.0000 Each(s)

Pick:

Qty Part Number Description Batch

50 ALS4-1032-130 Insert

or (see QSI 017)

*M102475*

21.0

D26511

Plug



Comment: Qty.: 20.0000 Each(s)/Unit Total : 20.0000 Each(s)

Pick:

Qty Part Number Description Batch

20 D2651-1 Plugs

*B29451*

22.0

D26513

O-Ring



Comment: Qty.: 20.0000 Each(s)/Unit Total : 20.0000 Each(s)

Pick:

Qty Part Number Description Batch

20 D2651-3 O-Rings

*B28692*

23.0

D2646

Aft Cap



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Pick:

Qty Part Number Description Batch

1 D2646 Aft Cap

*B28041*

24.0

MS27039108

Screw



①

Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Pick:

Qty Part Number Description Batch

2 MS27039-1-08 Screw

*M102404*

*m-r/m 07/01/22*

# Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes ☒ No ☐ DQA:   D   Date: 07/01/29  
 QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: OH-58 SKIDTUBE ASSEMBLY

Job Number: 28659A

Part Number: D058672041

Job Number:



Seq. #:

Machine Or Operation:

Description :

25.0

AN960JD10L

Washer



Comment: Qty.: 2.0000 Each(s)/Unit Total: 2.0000 Each(s)

Pick:

Qty Part Number Description Batch

2 AN960JD10L Washer M102217

26.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

1-Install inserts & wearpads as per dwg D2922. Insert a drop of Sikaflex at insert hole before installing wearplates.

A/R Sikaflex-291

Sikaflex expire date: 07-02

2-Install O-Rings D2651-3 on plugs D2651-1 with Petroleum Jelly and install plugs as per Dwg D2922

3-Install D2646 Aft Cap and seal with Sikaflex adhesive. Clean excess adhesive

A/R Sikaflex-291

Sikaflex expire date: 07-02

3- Wing Walk as per Dwg D2922 and QSI 005 4.4

M102635

SR/M

Batch:

07/01/23

27.0

QC3/5

INSPECT WORK/WING WALK



Comment: INSPECT WORK/WING WALK

28.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location:

800 28659A

07/07/26

29.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

07/01/29

Job Completion



U 0701-26

**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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**NOTE:** Date & initial all entries



DESIGN RF	DRAWN BY RF	DART AEROSPACE USA, INC. BELLEVUE, WA	
CHECKED [Signature]	APPROVED [Signature]	DRAWING NO. D2922	REV. A SHEET 1 OF 2
DATE 99.10.14		TITLE OH-58 SKIDTUBE ASSEMBLY	SCALE NTS
A	99.10.14	NEW ISSUE	
A1	# CP 01.08.20	Ø0.640 WAS Ø0.625	

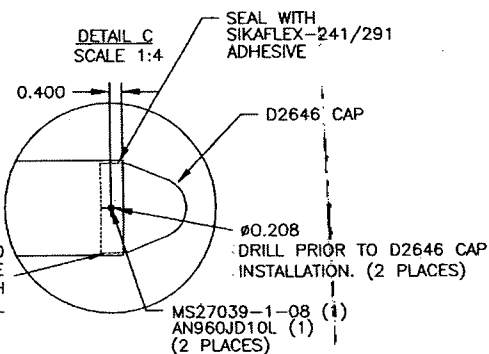
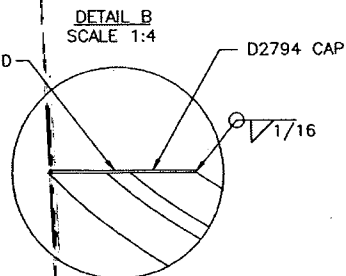
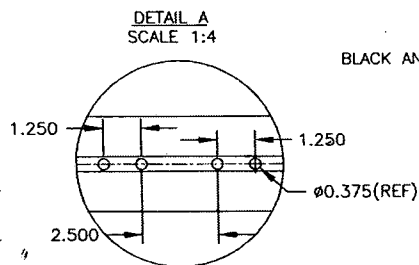
RELEASED  
00.05.11 #

Qty	Part Number	Description
X	D2922-041	SKIDTUBE ASSEMBLY
*	D2600-1	EXTRUSION
1	D2646	AFT CAP
4	D2648-3	WEARPAD
1	D2648-5	WEARPAD
22	D2649	CROSS BOLT SPACER
20	D2651-1	PLUG
20	D2651-3	O-RING
1	D2656-15	WEARSHOE
1	D2656-21	WEARSHOE
1	D2794	CAP
1	D2923	WEB
1	D2924	WEARSHOE
50	AKS7-1032-130 or AKS4-1032-130 or ALS7-1032-130 or ALS4-1032-130	INSERT
52	AN960JD10L	WASHER
52	MS27039-1-08	SCREW

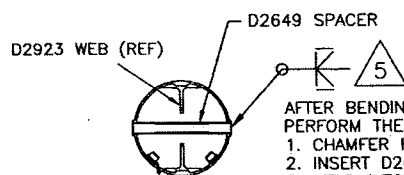
**GENERAL NOTES:**

- 1) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 2) LENGTH OF D2600-1 EXTRUSION REQUIRED BEFORE BENDING = 160 INCHES.\*
- 3) INSERT D2923 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241/291 ADHESIVE PER DART QSI 015 AFTER BENDING.
- 4) USE DART DRILL TEMPLATE DT8406 TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARSHOE INSERTS. INSTALL AKS7-1032-130 PER SECTION D-D (50 PLACES) AFTER FINISH. INSTALL MS27039-1-08 SCREWS AND AN960JD10L WASHERS IN ALL INSERTS. SEAL WITH SIKAFLEX-241/291.
- 5) WELDING TO BE DONE PER DART QSI 004.
- 6) FINISH:  
ACID ETCH, ALODINE PER DART QSI 005 4.1 PRIOR TO INSERTING D2923 WEB  
POWDER COAT ASSEMBLY GLOSS WHITE (REF 4.3.5.1) PER DART QSI 005 4.3  
BLACK ANTI-SKID PAINT AS INDICATED TO 0.50 ABOVE LOCATION RIDGE PER DART QSI 005 4.4
- 7) INSERT D2651-1 PLUG C/W D2651-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE) AFTER FINISH (20 PLACES).

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 28659A



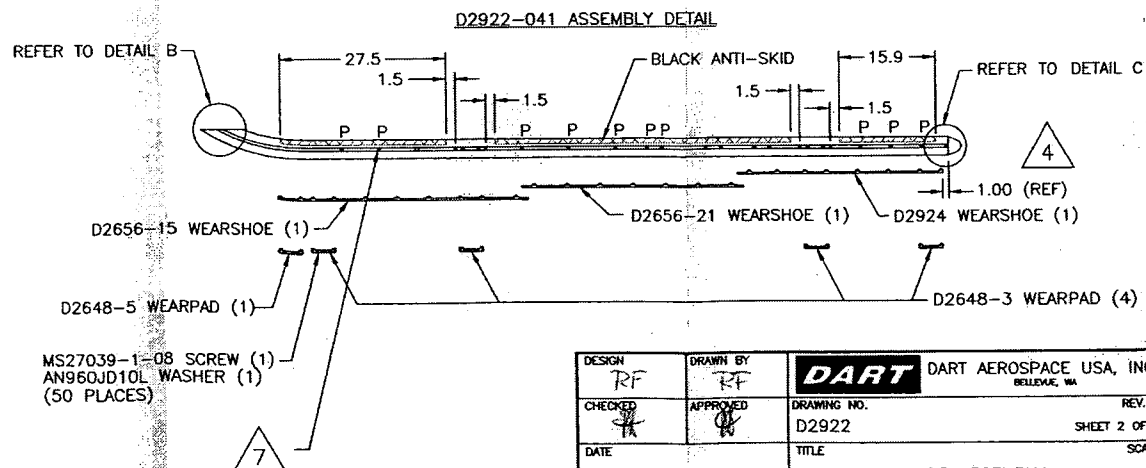
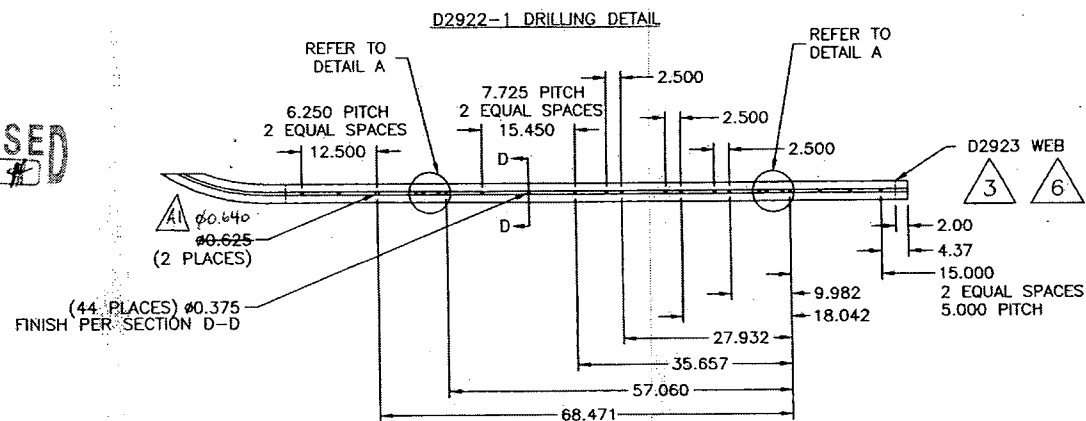
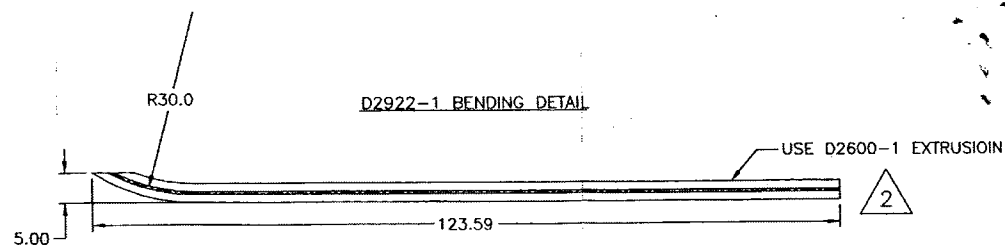
SECTION D-D  
SCALE 1:4  
FOR 0.375 HOLES ONLY



AFTER BENDING AND DRILLING ASSEMBLY  
PERFORM THE FOLLOWING FOR 0.375 HOLES ONLY:  
1. CHAMFER HOLE 0.030 X 45°  
2. INSERT D2649 SPACER (22 PLACES)  
3. WELD INTO PLACE AND GRIND FLUSH  
4. C'BORE D2649 SPACER TO 0.313 X 0.75 DEEP

AKS7-1032-130 (REF)  
(TYP 50 PLACES)

RELEASED  
00.05.11



DESIGN RF	DRAWN BY RF	DART DART AEROSPACE USA, INC. BELLEVUE, WA	
CHECKED RF	APPROVED RF	DRAWING NO. D2922	REV. A SHEET 2 OF 2
DATE 99.10.14		TITLE OH-58 SKIDTUBE ASSEMBLY	SCALE 1:20

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NO. 28659A  
WORK ORDER  
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RETURN TO  
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CHOP COPY

NO. 75

# AWS D17.1.2001 QUALIFICATION TEST RECORD

Name Barclay Elliott  
Joint Welding Procedure Tig  
Part number and Job number N0586 72041 / B29215 A

## TEST WELDS REQUIRED

BASE METAL Alum WELDING PROCESS Tig  
Penetration Complete ☐ Partial ☒ Single Weld ☒ Double Weld ☐  
Current AC ☒ DC ☐ Backing YES ☐ NO ☒

	Position		Vertical Down <input type="checkbox"/> Up <input type="checkbox"/>	
Sheet Groove	1G <input type="checkbox"/>	2G <input type="checkbox"/>	3G <input type="checkbox"/>	4G <input type="checkbox"/>
Tube Groove	1G <input type="checkbox"/>	2G <input type="checkbox"/>	5G <input type="checkbox"/>	6G <input type="checkbox"/>
Sheet Fillet	1F <input type="checkbox"/>	2F <input type="checkbox"/>	3F <input type="checkbox"/>	4F <input type="checkbox"/>
Tube Fillet	1F <input type="checkbox"/>	2F <input type="checkbox"/>	4F <input type="checkbox"/>	5F <input type="checkbox"/>

Crossbolt Spacer Welded into Skidtube

## TEST RESULTS

Visual Pass ☒ Fail ☐  
Penetration Pass ☒ Fail ☐

Crossbolt Spacer Pass ☒ Fail ☐

The above named individual is qualified in accordance with AWS D17.1.2001 to weld

Date of Test Coupon 06/11/15 Qualifier David A. A. A.

